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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,885	10/12/2004	Timothy H. Daubenspeck	BUR920040144US1	5884

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EXAMINER

GETACHEW, ABIY

ART UNIT PAPER NUMBER

2841

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,885

Applicant(s)

DAUBENSPECK ET AL.

Examiner

Abiy Getachew

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 15-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/01/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2841

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims, 1-13 and 27-39 drawn to an integrated circuit structure, classified in class 174, subclass 261.
- II. Claims 14-26 drawn to method of creating an inspection mark classified in class 29 subclass 830.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)).

In this case, the device can be made materially different process specifically forming an insulator over a wiring layer. It can be connected to the first element of the device.

3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Frederick W. Gibb on 9/15/2006 a provisional election was made without traverse to prosecute the invention claims

Art Unit: 2841

1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

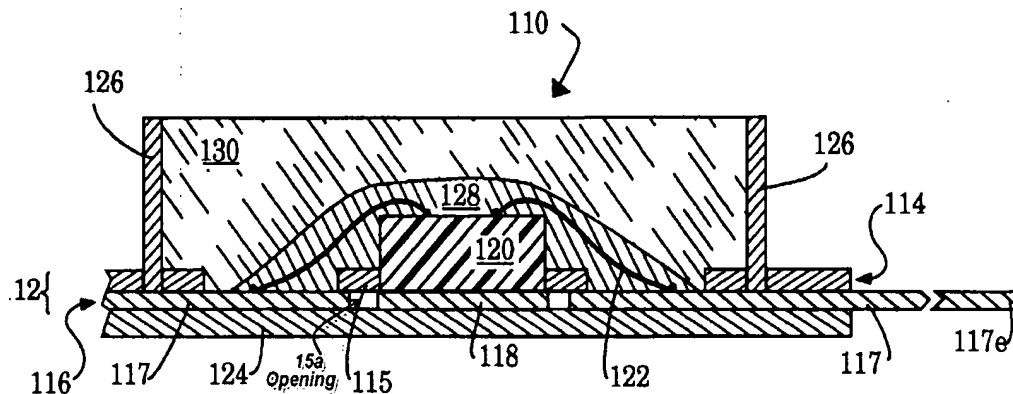
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Long et.al. (5831836).

Regarding claim 1 Long et.al. discloses an integrated circuit structure (Figure 1 Element 110) comprising: an insulator Layer (Figure 1 Element 114) a pad (Figure 1 Element 118) comprising a conductive material (Figure 1 Element 116) on said insulator Layer (Figure 1 Element 114) , said pad (Figure 1 Element 118) having a wirebond (Figure 1 Element 122) connection region and a probe pad region (Figure 1 Element 117) and an inspection mark (Figure 1 Element 115) between said wirebond connection region (Figure 1 Element 122) and said probe pad region (Figure 1 Element 117) wherein said inspection mark (Figure 1

Art Unit: 2841

Element 115) comprises an opening (See figure below i.e. Figure 1 Element 115a) in said insulator Layer (Figure 1 Element 114) that is filled with said conductive material (Figure 1 Element 116).



Regarding claim 2 as applied claim above, Long et.al. discloses further comprising a polyimide Layer (Column 3 paragraph 3 lines 21-31) above said conductive material (Figure 1 Element 116), said polyimide having a second opening, wherein said pad (Figure 1 Element 117) is exposed through said second opening. (See Column 3 paragraph 3 lines 21-31]

Regarding claim 3 as applied claim above, Long et.al. Wherein said inspection mark (Figure 1 Element 115) opening is formed above an insulating region (Figure 1 Element 114) of said wiring layer (Figure 1 Element 128).

Regarding claim 4 as applied claim above, Long et.al discloses, wherein said conductor comprises a refractory metal. [See Column 9 paragraph 9 lines 65-76]

Regarding claim 5 as applied claim above Long et.al discloses, wherein said conductor comprises one of aluminum, titanium, and alloys thereof. [Column 5 paragraph 2 lines 7-23]

Art Unit: 2841

Regarding claim 6 as applied claim above Long et.al discloses, wherein said inspection mark (Figure 1 Element 115) is visible from an exterior of said integrated circuit structure (Figure 1 shows a cross-sectional representation of a wire-bond integrated circuit package of this invention).

Regarding claim 7 as applied claim above Long et.al discloses, wherein said inspection mark (Figure 1 Element 115) delineates where probe inspection marks (Figure 1 Element 115) are permitted on said pad (Figure 1 Element 118). (See figure in claim 1)

3. Claims 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Howell (6,605,526 B1).

Regarding claim 8 Howell et.al discloses, an integrated circuit structure (See the abstract) comprising a wiring Layer (Figure 2 element 11) below said insulator Layer (Figure 2 element 12) said wiring Layer (Figure 2 element 11) comprising a conductor wire [Column 1 paragraph 5 lines 41-55] an insulator Layer on said wiring Layer (Figure 2 element 11) a pad [column 1 paragraph 3 lines 21-31] comprising a conductive material (Figure 2 element 14) on said insulator Layer (Figure 2 element 12) said pad [column 1 paragraph 3 lines 21-31] having a wirebond (element 31) connection region and a probe pad region [column 1 paragraph 3 lines 21-31] an inspection mark (Figure 2 element 20) between said wirebond (Figure 2 element 31) connection region and said probe pad region [column 1 paragraph 3 lines 21-31], wherein said inspection mark (Figure 2 element 20) comprises an opening in said insulator Layer (Figure 2 element 12) that is filled with said conductive material [Column 1 paragraph 2

Art Unit: 2841

lines 14-21] and a contact through said insulator Layer(Figure 2 element 12), said contact being adapted to electrically connect said conductor wire in said wiring Layer to said pad [column 1 paragraphs 3 lines 21-31], wherein said contact comprises said conductive material [Column 1 paragraph 2 lines 14-21].

Regarding claim 9 as applied claim above Howell et.al discloses, further comprising a polyimide Layer (Element 14) above said conductive material Figure 2 Element 20), said polyimide (Element 14) having a second opening (See figure 2 Element 30), wherein said pad [column 1 paragraphs 3 lines 21-31], is exposed through said second opening (See figure 2 Element 30).

Regarding claim 10 as applied claim above Howell et.al discloses, wherein said inspection mark (Figure 2 element 20) opening is formed above an insulating region (Figure 2 element 12) of said wiring Layer (Figure 2 element 11).

Regarding claim 11 as applied claim above Howell et.al discloses, wherein said conductor comprises a refractory metal. {See claim 10 of the reference used, i.e. A method of forming a connection to a conductor within an integrated circuit structure, said method comprising: defining a via through an exterior of said integrated circuit structure above a portion of said conductor while retaining a thin insulator on said portion of said conductor; and attaching a wirebond material to said portion of said conductor with a heated capillary, by breaking through said thin insulator disposed on said portion of said conductor without a separate etch step]

Art Unit: 2841

Regarding claim 12 as applied claim above Howell et.al discloses, wherein said conductor comprises on of aluminum, tantalum, titanium, and alloys thereof.

[Column 1 paragraph 3 lines 21-31]

Regarding claim 13 as applied claim above Howell et.al discloses, wherein inspection mark (Figure 2 Element 20) is visible from an exterior of said integrated circuit structure. (See figure 2, it shows a cross-sectional representation of an integrated circuit package of this invention)

Regarding claim 14 as applied claim above Howell et.al discloses, wherein said inspection mark delineates where probe inspection mark (Figure 2 element 20) are permitted on said pad [column 1 paragraphs 3 lines 21-31].

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abiy Getachew whose telephone number is (571) 272 6932. The examiner can normally be reached on Monday to Friday 8Am to 4:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ENAD G. ELVIN can be reached on (571) 272 1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.G.
September 17, 2006



Vit Miska
Primary Examiner